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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,687

03/11/2004

Dale M. Pitt

7784-000999

6261

27572 7590 01/28/2008  
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EXAMINER

ELDRED, JOHN W

ART UNIT

PAPER NUMBER

3641

MAIL DATE

DELIVERY MODE

01/28/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/798,687	<b>Applicant(s)</b> PITT, DALE M.	
	<b>Examiner</b> /J. Woodrow Eldred/	<b>Art Unit</b> 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 24-27 and 40-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-26, 40-45, 47-51, 54, 55 is/are rejected.
- 7) ☒ Claim(s) 27, 46, 52 and 53 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 24-26, 40-45, 47-51, 54-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wykes et al (4,562,546) in view of Todd et al (6,609,985).

Wykes et al disclose a method of damping vibrations of an aircraft wing including a control system, a movable structure (18-21) operatively connected to the wing, and an actuator operatively coupled to the structure to move the structure in response to a command signal from the control system (it is inherent that actuators are “commanded” to move via a command signal), the method comprising: mounting a vibration canceling circuit to the actuator (see sum junction in Figure 3) generating a signal representative of vibration of the member (sensors 30, 32, 34, 36 generate signals that represent the vibration of the movable structures), the generating performed using a vibration sensor operatively connected with the member (the vibrations are connected with the wing); combining the vibration signal with the command signal to generate a resultant driver signal configured to reduce the vibration of the member while driving the actuator (computer 50 transmits a control signal representative of structural motion of wing 12 to an actuator 52; actuator 52 rotates control surface 20 proportional to the control signal it receives; the rotation of surfaces 20 and 21 in accordance with the respective control signals from computer 50 is such as to oppose or suppress wing flexure and consequently rigid body/wing bending flutter which may otherwise occur, i.e., by damping out the oscillations due to wing structural motion and thereby avoiding the destabilizing effects of its combination with rigid body oscillation); and inputting the resultant driver signal to the actuator to move the structure (computer 50 sends a signal to actuator 52), further

comprising inputting the vibration signal to a circuit that receives the command signal and drives the actuator (see Figure 2 which illustrates the general schematic of signal connectivity.) While not using the terms “superimposing” and “inverting”, Wykes et al inherently disclose these steps. Summing the signals is the same as superimposing them. Where Wykes et al disclose “shaping” the response, Wykes et al is “inverting” the signal. The examiner knows of only one way to actively dampen a vibration signal and that is to control the actuator in the opposite direction to unwanted vibrations. In order to control the actuator in the opposite direction, the signal must be inverted. Wykes et al fail to disclose a vibration canceling circuit (to generate vibration cancellation signals in response to vibration sensors) separate from the control circuit (that generates the signal to move the movable structure on the wing) and that the vibration canceling circuit is physically mounted on the actuator and is electrically between the control circuit and the actuator. Todd et al (6,609,985) teaches that it is well known to provide an integral modular 32 vibration damping control circuit 34 and sensor 33 that is physically connected to the actuator 35 that eliminates vibrations. (Todd et al discloses both a passive analog resonance vibration control circuit 34 in Figure 1 and an active vibration control circuit 137 in Figure 4.) One having ordinary skill in the art would be motivated to combine the Todd et al teaching of a separate, modular, vibration control system in place of a vibration control system integrated within the moveable structure control system because a modular system provide the advantages of providing both a less complex main control system and vibration control system, and would allow the replacement of either system without the replacement of the other in case of failure. As to the electrical placement of the modular vibration control circuit, it could only be placed before the control system circuit or between the control system circuit and the actuator. It would be obvious to one of ordinary skill in the art to choose either one of these very limited choices in order to make the system work in the desired manner.

3. Claims 27, 46, 52, and 53 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to /J. Woodrow Eldred/ whose telephone number is 571-272-6901. The examiner can normally be reached on Monday to Thursday, from 8:00 a.m. to 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. Woodrow Eldred/  
Primary Examiner  
Art Unit 3641

JWE